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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,071	08/27/2003	Eric McCutcheon Rentschler	200300297-1	5809

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HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER
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NGUYEN, VAN THU T

ART UNIT	PAPER NUMBER
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2824

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/650,071

Applicant(s)

RENTSCHLER, ERIC  
MCCUTCHEON

Examiner

VanThu Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-26 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/27/03, 2/27/04</u> . | 6) <input checked="" type="checkbox"/> Other: <u>Search Report</u> .                    |

## DETAILED ACTION

1. Claims 1-26 are pending.

### *Specification*

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Abstract is less than 50 words.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-6, 8-12, 15-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Best et al. (U.S. Patent No. 6,570,944).

Regarding claim 8, Best et al. disclose, in FIG. 4, an apparatus comprising:

clock generation circuitry (105, 102, 112, 115, 118, 125, 120, 122, 140, 170) to generate a clock signal (129) aligned relative to an edge of a strobe signal received from a transmitting device (from RAM 202 and RAM 212, see FIG. 6);

control signal generation circuitry (inverters 146s) to generate one or more latch control signals (DSS1-DSSN) aligned relative to an edge of the clock signal; and

latching circuitry (130-133) to latch one or more data signals received from the transmitting device with one or more latch control signals.

(See column 4, line 45 to column 5, line 57)

Regarding claim 9, Best et al. disclose, the clock generation circuit comprising circuitry (112, 115 170, 140, 120, 122) to substantially align an edge of the clock signal with an edge of a strobe signal, and circuitry (146) to delay the clock signal by a predetermined amount of time.

Regarding claim 10, Best et al. also disclose, the clock generation circuitry comprises circuitry to substantially align an edge of the clock signal with an edge of a strobe signal; and wherein the control signal generation circuitry comprising circuitry to substantially align an edge of one or more latch control signals (such as DSS1) with an edge of the clock signal and circuitry (146) to delay one or more latch control signals by a predetermined amount of time.

Regarding claim 11, Best et al. inherently disclose the clock generation circuitry is to receive from the transmitting device a strobe signal defining a pulse having a first edge associated with a first set of one or more data signals and a second edge associated with a second set of one or more data signals (see column 11 line 66 to column 12 line 12).

Regarding claim 12, Best et al. disclose the latching circuitry comprises a first latch (130) to latch a first set of a plurality of data signals (obviously a plurality of data signals being

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transmitted via DQ1 line) with a first latch control signal (DSS1) and a second latch (133) to latch a second set of a plurality of data signals with a second latch control signal (DSSN).

Regarding claims 1-6, they encompass the same scope of invention as to that of claims 8-12 except they draft in method format instead of apparatus format. The claims are therefore rejected for the same reason as set forth above.

Regarding claims 15-19, they are rejected under U.S.C. 102(e) since they recite the same limitation as in claims 8-12.

5. Claims 1, 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Jeong (U.S. Patent No. 6,707,723).

Regarding claim 1, Jeong discloses, in FIG. 4, a method comprising generating a clock signal (PDSD2) aligned relative to an edge of a strobe signal (DS) received from an inherent transmitting device; and latching one or more data signals (DIN) received from the transmitting device using the clock signal.

Regarding claim 6, Jeong further discloses, in FIG. 8, a strobe signal (DS) defining a pulse having a first edge associated with a first set of one or more data signals and a second edge associated with a second set of one or more data signals (DIN).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claim 7, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Best et al. in view of Mehta et al. (U.S. Patent No. (6,681,301).

Regarding claim 13, Best et al. disclose, as applied in prior rejection of claim 8, all claimed subject matter except clock alignment control circuit to request to receive a strobe signal for alignment of the clock signal.

Mehta et al. disclose, in FIG. 2, a double-data rate memory system comprising Memory Controller 210 requesting for data read, and the DIMM responding by providing the request data, along with DQS strobe (see column 6, lines 10-17).

Since Best et al. and Mehta et al. are both from the same field of endeavor, the purpose disclosed by Mehta et al. would have been recognized in the pertinent art of Best et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to realize that the memory controller usually receives strobe signal by requesting.

Regarding claim 7, it encompasses the same scope of invention as to that of claim 13 except it drafts in method format instead of apparatus format. The claim is therefore rejected for the same reason as set forth above.

8. Claims 20-24, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Best et al. in view of Wilcox et al. (U.S. Patent No. 6,510,099).

Regarding claims 20-24 and 26, Best et al. disclose, as applied in prior rejection of claims 8-10 and 12, all claimed subject matter. Best et al. further disclose, plurality of memory modules RAM 616-630, and a memory controller 602 coupled to memory modules (see FIG. 10) and

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comprising respective latch control circuitry for each of a plurality of strobe signal lines for one or more memory modules (100 for RAM 202, and 210 for RAM 212, see FIG. 6).

However, Best et al. do not disclose a processors coupled to the memory controller and memory modules.

Wilcox et al. disclose, in FIG. 3, a processor 102 coupled to a memory controller 106 and memory modules within memory system 110.

Since Best et al. and Wilcox et al. are both from the same field of endeavor, the purpose disclosed by Wilcox et al. would have been recognized in the pertinent art of Best et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art including a processor in to memory system disclosed in Best et al. because processor is an essential component for the memory system to operate.

9. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Best et al. in view of Mehta et al. further in view of Wilcox.

Regarding claim 25, Best et al. disclose the memory modules are DDR DRAM.

***Allowable Subject Matter***

10. Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations. Best et al., Jeong, Mehta et al., and Wilcox, taken individually or in combination, do not teach the claimed invention having a comparator to

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compare the count to a predetermined time interval, in combination with the remaining claimed limitations.


*Conclusion*

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VanThu Nguyen whose telephone number is (571) 272-1881. The examiner can normally be reached on Monday-Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VTN  
September 6, 2004

  
VanThu Nguyen  
Primary Examiner  
Art Unit 2824